



EO contribution to



THE GLOBAL GOALS
For Sustainable Development



Verkenning SDGs en Aardobservatie

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3 juli 2017

Den Haag



G4AW

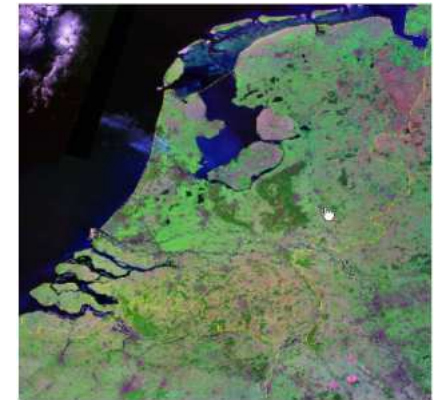
GEODATA FOR AGRICULTURE AND WATER

Netherlands
Space
Office



About NSO

- Governmental space agency of the Netherlands
- Reporting to:
 - Ministry of Economic Affairs
 - Ministry of Infrastructure and Environment
 - Ministry of Education, Culture and Science
 - Ministry of Foreign Affairs (G4AW)
 - Netherlands Organisation for Scientific Research - NWO
- Task: advise upon and realise Dutch space policy
- Outcome: space applications and technology for science, economy and society



Netherlands
Space
Office





G4AW objectives



- User demand driven (information, not data)
- Improve food production and income of smallholders, more efficient use of inputs
- Organize public private partnerships
- Stimulate entrepreneurship
- Achieve financially sustainable (advisory, insurance) services at end of project
- 17 projects running in 10 countries reaching 5-10 million farmers (objective > 3 million)





From G4AW to SDGs

- Food security
- Water productivity in agriculture
- Sustainable landscapes
- Sustainability
- Public private partnership cooperation

- How can EO (and G4AW) benefit SDGs?
- User driven, and not data driven

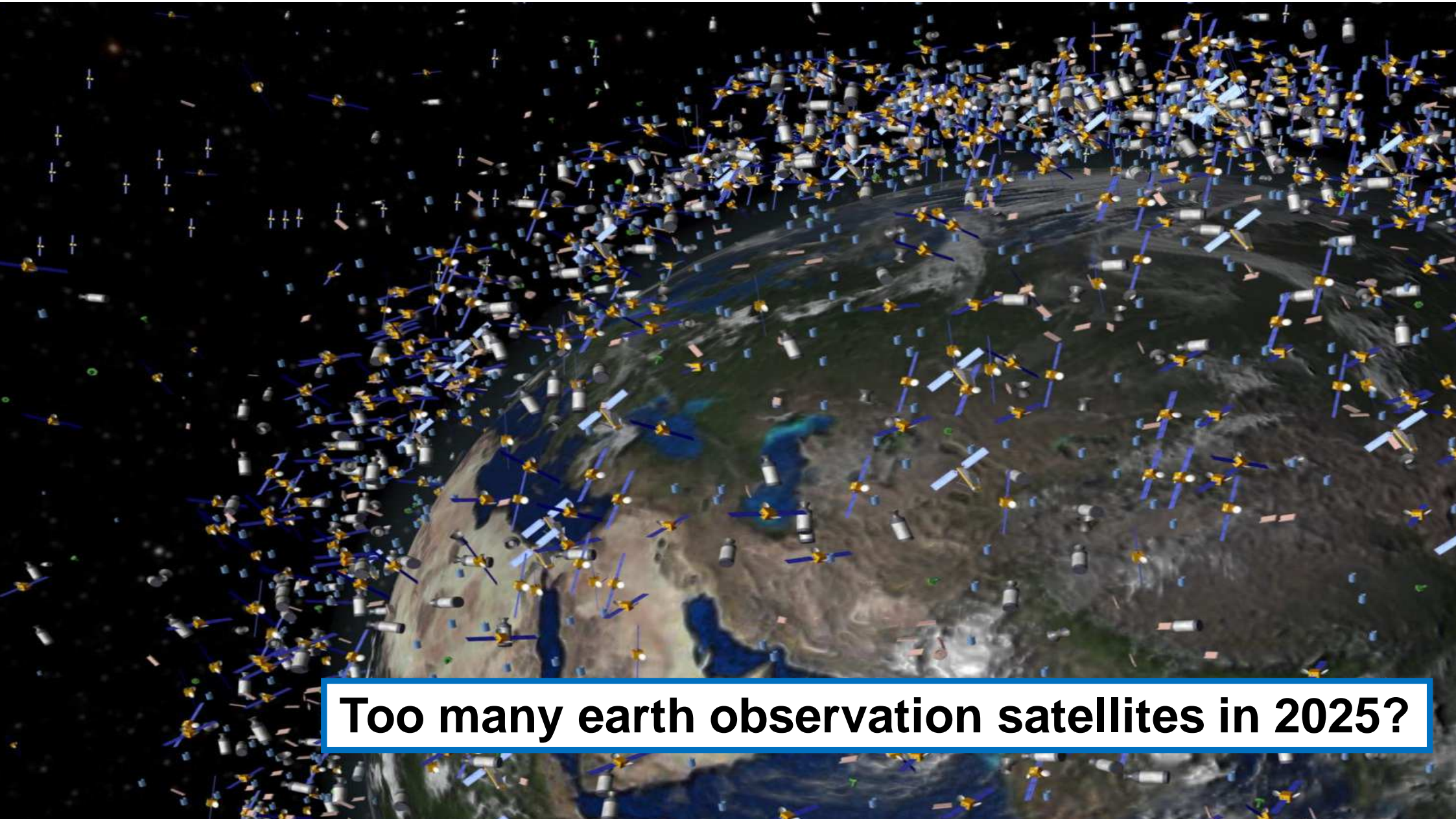




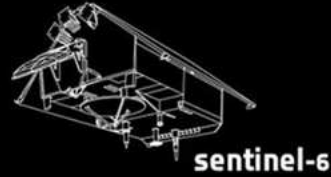
Reaching SDGs and reporting?

- Facts:
 - In many developing countries no/little capacity in statistical offices and monitoring systems
 - About half of SDG indicators in NL can be measured with standard statistical means
 - New ways of collecting data needed
- Opportunity:
 - Innovation
 - Use of (satellite) Earth observation, big data, etc.

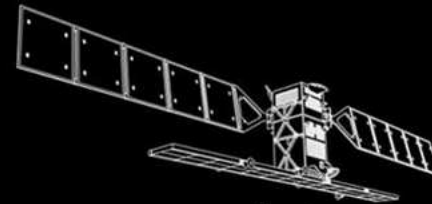




Too many earth observation satellites in 2025?

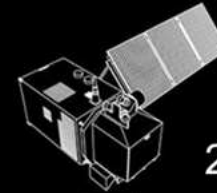


sentinel-6



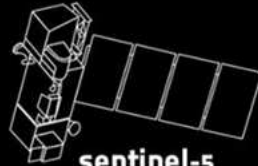
sentinel-1

2014



sentinel-2

2015



sentinel-5

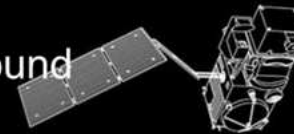


Each type of satellite:
2 in space, 1 spare on ground



sentinel-5p

2017



sentinel-3

2016



sentinel-4

2017



Land Monitoring



Atmosphere Monitoring



Emergency Management



Marine Environment



Climate



Security

- > 20 years free satellite data
- > Billion investment by "tax payer" (confirmed by BH, PWC)

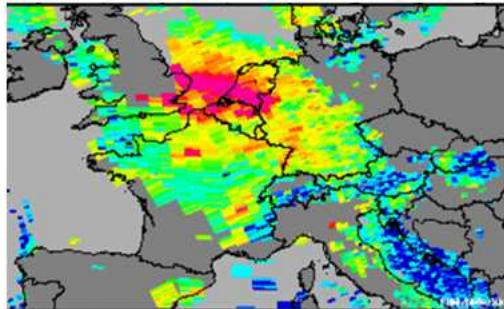
Private sector initiatives (Just started / coming soon)

- > 10 Venture Capital financed constellations
- > Multiple observations / day
- > Price per ha is going down

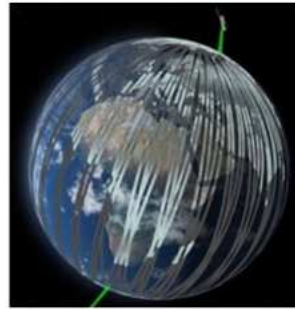




Added value of satellites



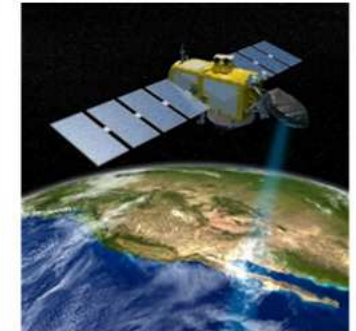
Large regions



Global coverage

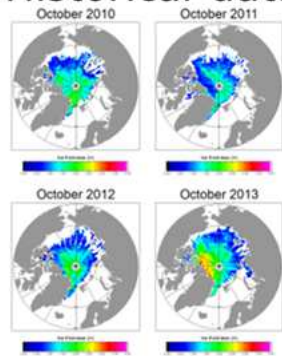


Global access



Homogeneous data

Repeated obs
Historical data



Integration



Multiple users

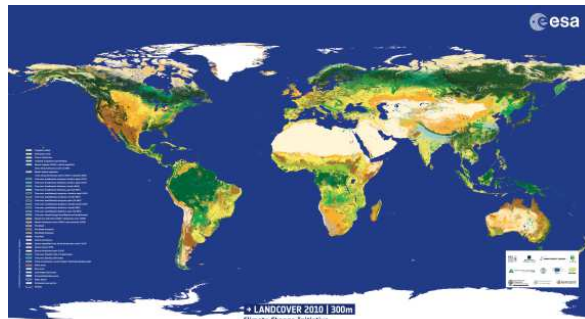


Near real time





Bridging statistics and EO





Bridging statistics and EO

- Cooperation UN-STAT – GEO since 2014
- Pilots started, e.g. CBS/Deltares/eLEAF in NL
- UN-GEMI project on SDG6-Water
- ESA EO4SD projects
- GEO EO4SDG, Data4SDG, IISD SDG, etcetera
- Radiant.Earth
- This discussion today...



Earth Observation and Sustainable
Development Goals in the Netherlands

*Towards more synergetic use of Earth Observation:
An exploratory study*

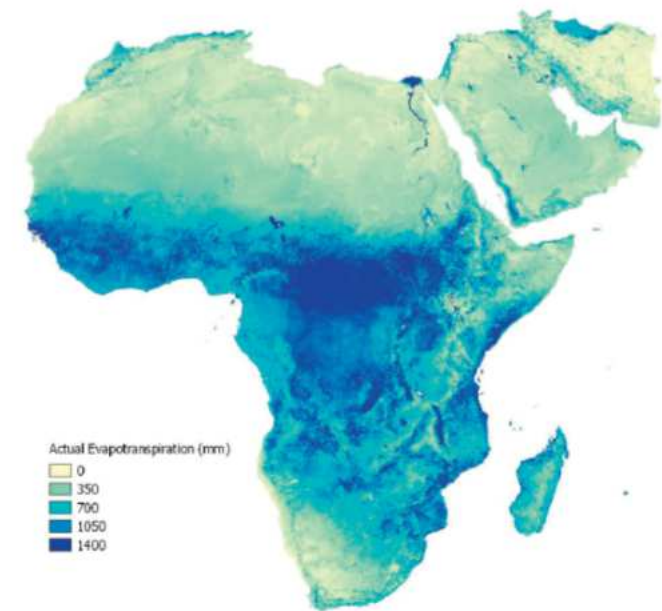




Many open data sets available, e.g.

- FAO WAPoR (SDG2, 6)
- WRI Aqueduct (SDG 6)
- WRI Global Forest Watch (SDG 13, 15)
- ESA Climate Change Initiative (SDG 15)

- NL organizations are contributing



FRAME L1: 2015 Annual Actual Evapotranspiration, taken from FAO Water Productivity (test data).



Dutch policy themes & SDGs

- Food security (SDG2)
- International Water Ambition (SDG 6)
- 25% increase in water productivity in agriculture (SDG 6)
- Paris Climate Agreement (SDG 13)
- Sustainable landscapes (SDG 15)
- Biodiversity (SDG 15)
- And others?





Dutch capacity in Earth Observation

- (Very) strong research organizations (agri, water, ...)
- Many SME's (although, more small than medium)
- Much experience in developing/emerging countries
- More cooperation, integrating various specialized (half) products in a user-oriented service

- Business services relate to/support SDGs



Running activity

AO9019

Title LARGER SCALE EO
EXPLOITATION ACTIVITIES IN
SUPPORT
OF SUSTAINABLE
DEVELOPMENT
INITIATIVE (EO4SD). BATCH 1

Batch 1: a.o. Agriculture, Water

With eLEAF, Satelligence, WaterWatch
Cooperative, NEO



Cerberus (EO in game)

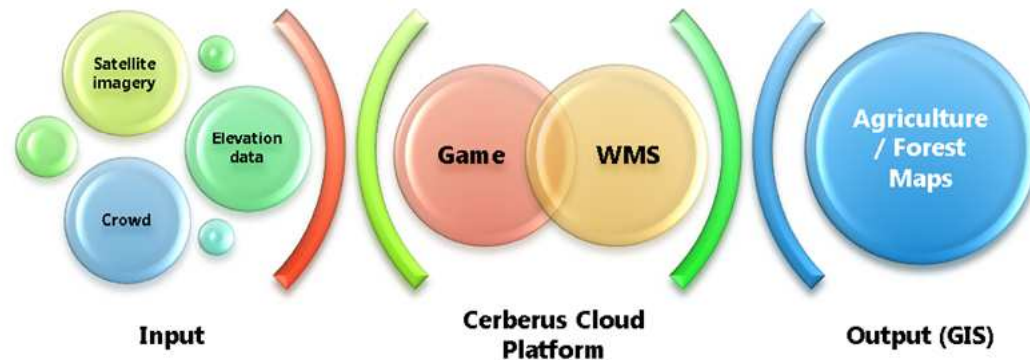


Cerberus: Forest Falcon | Valorize satellite imagery through crowdsourcing generating maps

- Faster, More thorough, Cheaper and just as precise as experts
- Information to be used to assist agriculture and boost yield
- Monitoring and safeguarding of rain forests

Public engagement through a game

- Learning, awareness and crowdfunded community development



Mission

Bending revenues and brainpower abundant in the gaming market to good causes and yet be profitable.

Vision

A world where nature is sustained and carbon stocks are guarded while food production is ample, even with a growing world population.



What's next?

- Dutch policies on agri, water, climate
- CBS is “guide” for SDG in partner countries
- Rekenkamer has similar role (Sharaka)
- G4AW in 10 countries (and growing)
- NWO research (GO, WOTRO)
- International cooperation (with NL partners?)
- WaPOR database covers all Africa





Just released...

AO9019

Title LARGER SCALE EO
EXPLOITATION ACTIVITIES IN
SUPPORT
OF SUSTAINABLE
DEVELOPMENT
INITIATIVE (EO4SD). BATCH 2

Open date 28/06/2017

Closing date 29/09/2017 13:00

Batch 2:
Coastal Environment, Disaster Risk
Mitigation Reduction, Fragile Conflict
States, Climate Resilience Proofing.



Questions?





Thank you for
your attention

G4AW is a programme
commissioned by



Contact: g4aw@spaceoffice.nl



G4AW
GEODATA FOR AGRICULTURE AND WATER

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